

Applicant: Lee, Hyok
Serial No.: 10/789,862

PATENT
Atty Docket: 1506-500

AMENDMENTS TO THE CLAIMS

Please amend claims 5 and 9 as set forth below.

Please add new claims 11-19 as set forth below.

Listing of Claims

1. (Original) An irrigation valve comprising:

a valve housing having an interior valve seat;

a valve sized to mate with said valve seat;

a guide washer positioned above said valve and having an inner circular channel containing fins;

a diaphragm separating said valve into an upper diaphragm chamber and a lower main water flow chamber; said diaphragm positioned adjacent to said guide washer over said fins; and

a solenoid disposed on said valve housing and configured to create and relieve water pressure within said diaphragm chamber and thereby control water flow through said main water flow chamber.
2. (Original) The irrigation valve of claim 1 wherein said guide washer is comprised of plastic.
3. (Original) The irrigation valve of claim 1 wherein said fins extend radially across said circular channel.
4. (Original) The irrigation valve of claim 1 wherein said fins extend axially to a bottom surface of said circular channel.
5. (Currently Amended) An irrigation valve comprising:

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a housing separated into an upper chamber and a lower chamber;

a diaphragm interposed between said upper and lower chamber;

a sealing ~~sealing~~ member disposed in said lower chamber to control fluid flow within said lower chamber;

said sealing member having an upper surface positioned to contact said diaphragm;

said upper surface comprising a slotted annular space so as to provide support to said diaphragm during substantially all pressure conditions in said upper chamber.

6. (Original) An irrigation valve according to claim 5 wherein said slotted annular space is an annular space with radially extending fins.

7. (Original) An irrigation valve according to claim 5 wherein said slotted annular space is an annular space with radially extending bars.

8. (Original) An irrigation valve according to claim 6 wherein said fins extending axially to a bottom surface of said slotted annular space.

9. (Currently Amended) A method of operating an irrigation valve comprising:

providing a valve by which flow through said valve is controlled by pressurization and depressurization of a diaphragm chamber;

preventing undue tension on a diaphragm of said diaphragm chamber by providing substantially uniform support of said diaphragm during all occurrences of pressurization of said diaphragm chamber, including supporting said diaphragm with a non-continuous surface.

10. (Original) A method according to claim 9 wherein providing substantially uniform support includes supporting said diaphragm with a slotted annular surface.

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11. (New) An irrigation valve comprising:

a valve housing having an interior valve seat;

a valve sized to mate with said valve seat;

a guide washer positioned above said valve and having an inner circular channel containing fins;

a diaphragm separating said valve into an upper diaphragm chamber and a lower main water flow chamber; said diaphragm positioned adjacent to said guide washer over said fins and wherein said fins extend radially across said circular channel; and

a solenoid disposed on said valve housing and configured to create and relieve water pressure within said diaphragm chamber and thereby control water flow through said main water flow chamber.

12. (New) The irrigation valve of claim 11 wherein said guide washer is comprised of plastic.

13. (New) The irrigation valve of claim 11 wherein said fins extend axially to a bottom surface of said circular channel.

14. (New) An irrigation valve comprising:

a valve housing having an interior valve seat;

a valve sized to mate with said valve seat;

a guide washer positioned above said valve and having an inner circular channel containing fins and wherein said fins extend axially to a bottom surface of said circular channel;

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a diaphragm separating said valve into an upper diaphragm chamber and a lower main water flow chamber; said diaphragm positioned adjacent to said guide washer over said fins; and

a solenoid disposed on said valve housing and configured to create and relieve water pressure within said diaphragm chamber and thereby control water flow through said main water flow chamber.

15. (New) The irrigation valve of claim 14 wherein said guide washer is comprised of plastic.

16. (New) The irrigation valve of claim 14 wherein said fins extend radially across said circular channel.

17. (New) An irrigation valve comprising:

a valve housing having an interior valve seat;

a valve sized to mate with said valve seat;

a guide washer positioned above said valve and having an inner circular channel containing fins and wherein said guide washer is comprised of plastic;

a diaphragm separating said valve into an upper diaphragm chamber and a lower main water flow chamber; said diaphragm positioned adjacent to said guide washer over said fins; and

a solenoid disposed on said valve housing and configured to create and relieve water pressure within said diaphragm chamber and thereby control water flow through said main water flow chamber.

18. (New) The irrigation valve of claim 17 wherein said fins extend radially across said circular channel.

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19. (New) The irrigation valve of claim 17 wherein said fins extend axially to a bottom surface of said circular channel.